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AMENDMENTS TO THE CLAIMS:

1.   (Previously Presented) A data triggered phase locked loop (PLL)
comprises:

>   phase detector operably coupled to determine a phase difference
> between transitions of a data signal and a feedback signal;
>   charge pump operably coupled to convert the phase difference into
> a charge pump current;
>   loop filter operably coupled to convert the charge pump current into
> a control voltage;
>   voltage controlled oscillator operably coupled to convert the control
> voltage into a recovered clock, wherein feedback signal is derived from
> the recovered clock; and
>   edge detection module operably coupled to detect missing
> transitions of the data signal and to alter at least one of the phase
> difference and charge pump current based on the missing transitions such
> that bandwidth of the data triggered PLL remains substantially constant for
> varying data signal transition densities, the missing transitions being
> detected by:

>>   comparing transitions of the recovered clock with transitions
>> of the data signal;.
>>   when a transition occurs in the recovered clock and a
>> substantially contemporaneously transition does not occur in the
>> data signal, indicating a missing transition of the data signal;
>>   incrementing a missing transition count of the data signal
>> based on the indication of the missing transition until a transition of
>> the data signal occurs substantially contemporaneously with
>> another transition of the recovered clock to produce an
>> accumulated missing transition count; and
>>   at each transition of the data signal, establishing a phase
>> error scaling factor based on the accumulated missing transition
>> count and a phase error-to-missing transition relationship by:

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establishing a normalized phase error in accordance with the
accumulated missing transition count as the phase error-to-missing
transition relationship, wherein the normalized phase error
corresponds to $(n+2)/2$ for $[0 ... n]$, wherein n corresponds to a
numerical value of the accumulated missing transition count; and

summing the normalized phase error to produce the phase
error scaling factor.

2. - 3. (Cancelled)

4.   (Previously Presented) The data triggered PLL of claim 1, wherein the
establishing the phase error scaling factor comprises:

providing a mathematical function that relates phase error to
number of missing transitions as the phase error-to-missing transition
relationship; and

solving the mathematical function for the accumulated missing
transition count.

5.   (Previously Presented) The data triggered PLL of claim 1, wherein the
phase detector comprises:

phase offset module operably coupled to provide a phase offset to
at least one of phase of the data signal and phase of the feedback signal
based on the phase error scaling factor to produce at least one of altered
phase of the data signal and altered phase of the feedback signal; and

up/down signal generation module operably coupled to produce:
an up signal when:
the altered phase of the data signal leads the phase of the
feedback signal;
the phase of the data signal leads the altered phase of the
feedback signal; or
the altered phase of the data signal leads the altered phase of the
feedback signal; and

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a down signal when:

the altered phase of the feedback signal leads the phase of the
data signal;

the phase of the feedback signal leads the altered phase of the
data signal; or

the altered phase of the feedback signal leads the altered phase of
the data signal.

6.   (Cancelled)

7.   (Original) The data triggered PLL of claim 1, wherein the charge pump
comprises:

a variable current source operably coupled to provide a source
current during a variable source current on time to the loop filter based on
a first state of the phase difference that corresponds to when phase of the
data signal leads phase of the feedback signal, wherein duration of the
variable source current on time during which the variable current source
provides the source current is based on the phase error scaling factor; and

a variable current sink operably coupled to draw a sink current
during a variable sink current on time from the loop filter based on a
second state of the phase difference that corresponds to when the phase
of the feedback signal leads the phase of the data signal, wherein duration
of the variable sink current on time during which the variable current sink
draws the sink current is based on the missing transitions.

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8.   (Currently Amended) A method for recovering a clock from a data signal, the method comprises:

determining a phase error between a feedback signal and the data signal;

determining missing transitions of the data signal;

scaling the phase error based on the missing transitions to produce a scaled phase error, the scaling comprising:

establishing a normalized phase error in accordance with the accumulated missing transition count, wherein the normalized phase error corresponds to $(n+2)/2$ for $[0 \dots n]$, wherein n corresponds to a numerical value of the accumulated missing transition count; and

summing the normalized phase error to produce the scaled phase error; and

generating a recovered clock based on the scaled phase error, wherein the feedback signal is derived from the recovered clock;

wherein the determining the missing transitions comprises:

comparing transitions of the recovered clock with transitions of the data signal;

when a transition occurs in the recovered clock and a substantially contemporaneous transition does not occur in the data signal, indicating a missing transition of the data signal; and

incrementing a missing transition count of the data signal based on the indication of the missing transition until a transition of the data signal occurs substantially contemporaneously with another transition of the recovered clock to produce an accumulated missing transition count.

9.   (Cancelled)

10.   (Cancelled)

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11.   (Currently Amended) The method of claim[[9]] 8, wherein the scaling the phase[[errr]] error comprises:

   providing a mathematical function that relates phase error to number of missing transitions; and

   solving the mathematical function for the accumulated missing transition count.

12.   (Currently Amended) A computer readable medium storing instructions thereon for recovering a clock from a data signal, the instructions comprising:

   determining a phase error between a feedback signal and the data signal;

   determining missing transitions of the data signal;

   scaling the phase error based on the missing transitions to produce a scaled phase error, the scaling comprising:

      establishing a normalized phase error in accordance with the accumulated missing transition count, wherein the normalized phase error corresponds to $(n+2)/2$ for $[0 ... n]$, wherein n corresponds to a numerical value of the accumulated missing transition count; and

      summing the normalized phase error to produce the scaled phase error; and

   generating a recovered clock based on the scaled phase error, wherein the feedback signal is derived from the recovered clock;

   wherein determining the missing transitions further comprises:

      comparing transitions of the recovered clock with transitions of the data signal;

      when a transition occurs in the recovered clock and a substantially contemporaneous transition does not occur in the data signal, indicating a missing transition of the data signal; and

      incrementing a missing transition count of the data signal based on the indication of the missing transition until a transition of the data signal

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occurs substantially contemporaneously with another transition of the
recovered clock to produce an accumulated missing transition count.

13.   (Cancelled)

14.   (Cancelled)

15.   (Currently Amended) The computer readable medium of claim[[13]]_12,
wherein scaling the phase error further comprises:

        providing a mathematical function that relates phase error to
number of missing transitions; and   ~

        solving the mathematical function for the accumulated missing
transition count.

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